CIVIL TECH LABS

Accredited by **NABL** as per ISO/ IEC 17025 : 2005

5, 1st Cross, Srinivasa Colony, Mission Road, Bangalore - 560027

Ph: 080 - 4114 2867 / Mob. : 96862 31801, Email: civiltechlabs@gmail.com

T-2654

To,

Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP.

25th April 2017

Dear Sir,

Sub: Testing of Bituminous Macadam & Bituminous Concrete.

As requested, tests on physical properties were carried out for the Bituminous Macadam & Bituminous Concrete supplied by you, for the work of **'Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.'**

Please find the enclosed Test Reports of the above.

Thanking You,
For Civil Tech Labs

Khushboo

(KHUSHBOO L.)
Quality Manager

CIVIL TECH LABS BANGALORE

Asst. Executive Engineer
Yelahanka Sub. Divison
(BBMP Ynk. Zn).
Yelahanka, Bangalore

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TEST REPORT

TEST ON THE DETERMINATION OF BITUMEN CONTENT ON BITUMINOUS MACADAM MIX-GRADE 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.
Name of the Agency	M/s. Technical Manager(West), KRIDL.
Date of Testing	20/04/2017

A)

Sl. No.	Test	Test Method	Technical Reference
1	Extraction of mineral aggregate	Test Method A (Centrifuge Method)	ASTM: D2172/ D2172M-11
2	Determination of amount of mineral matter/fines in the extract	Ashing Method	

B)

Specification: As Per MORTH (4th Revision) Table 500-4 BM-Grade -2, Bitumen Content for BM Grade-2 is 3.3 % TO 3.5 %		
Sl. No.	**Description**	**Values**
1	Weight of bituminous mixture before extraction test, W_1 g	2000
2	Weight of mineral aggregate obtained from centrifuge extractor, W_2 g	1920.2
3	Weight of mineral matter in the total volume of extract (by ashing), W_3 g	11.2
4	Total weight of aggregate in the bituminous mixture, W_4 g = (W_2 +W_3) g	1931.4
5	Total weight of Bitumen extracted from the mixture, W_5 g = (W_1-W_4) g	68.6
6	Bitumen content in %, (W_5/W_1) %	3.43

Remarks	Satisfies the requirements.

Note:

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3. Any correction invalidates this report.
4. The results are based on the test conducted on samples supplied by the customer.

Asst. Executive Engineer
Yelahanka Sub. Divison
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Yelahanka, Bangalore

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Quality Manager

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TEST REPORT

GRADATION TEST ON BITUMINOUS MACADAM MIX GRADE - 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.
Name of the Agency	M/s. Technical Manager(West), KRIDL.
Date of Testing	20/04/2017
Technical Reference	IS : 2386(Part I)–1963 (Reaffirmed 2011)

	Sample-1		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-4 for BM Grade-2**	**Actual % By Weight Passing IS Sieve**	**Remarks**
26.5	100	**100**	**Satisfies the requirement.**
19	90-100	**97.2**	
13.2	56-88	**73.4**	
4.75	16-36	**24.6**	
2.36	4-19	**15.2**	
0.3	2-10	**8.4**	
0.075	0-8	**6.8**	

Note:

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Yelahanka, Bangalore

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TEST REPORT

GRADATION TEST ON BITUMINOUS MACADAM MIX GRADE - 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.
Name of the agency	M/s. Technical Manager(West), KRIDL.
Date of Testing	20/04/2017
Technical Reference	IS : 2386(Part I)–1963 (Reaffirmed 2011)

	Sample-2		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-4 for BM Grade-2**	**Actual % By Weight Passing IS Sieve**	**Remarks**
26.5	100	**100**	**Satisfies the requirement.**
19	90-100	**96.5**	
13.2	56-88	**72.6**	
4.75	16-36	**25.6**	
2.36	4-19	**16.6**	
0.3	2-10	**7.4**	
0.075	0-8	**6.6**	

Note:

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(KHUSHBOO L.)
Quality Manager

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Yelahanka, Bangalore

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TEST REPORT

TEST ON DETERMINATION OF BITUMEN CONTENT ON BITUMINOUS CONCRETE MIX-GRADE 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.
Name of Agency	M/s. Technical Manager(West), KRIDL.
Date of Testing	25/04/2017

A)

Sl. No.	Test	Test Method	Technical Reference
1	Extraction of mineral aggregate	**Test Method A (Centrifuge Method)**	**ASTM: D2172/ D2172M-11**
2	Determination of amount of mineral matter/fines in the extract	**Ashing Method**	

B)

Specification: As Per MORTH (4th Revision) Table 500-18, Bitumen Content for BC Grade-2 is 5% to 7%

Sl. No.	Description	Values
1	Weight of bituminous mixture before extraction test, W_1 g	**2000.00**
2	Weight of mineral aggregate obtained from centrifuge extractor, W_2 g	**1872.60**
3	Weight of mineral matter in the total volume of extract (by ashing), W_3 g	**12.89**
4	Total weight of aggregate in the bituminous mixture, W_4 g = (W_2 +W_3) g	**1885.49**
5	Total weight of Bitumen extracted from the mixture, W_5 g = (W_1-W_4) g	**114.51**
6	Bitumen content in %, (W_5/W_1) %	**5.73**

Remarks	**Satisfies the requirement.**

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TEST REPORT

GRADATION TEST ON BITUMINOUS CONCRETE MIX GRADE - 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.
Name of Agency	M/s. Technical Manager(West), KRIDL.
Date of Testing	25/04/2017
Technical Reference	IS : 2386(Part I)–1963 (Reaffirmed 2011)

	Sample-1		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-18 for BC Grade-2**	**Actual % By Weight Passing IS Sieve**	**Remarks**
19	100	**100**	**Satisfies the requirements**
13.2	79-100	**97.4**	
9.5	70-88	**84.5**	
4.75	53-71	**63.5**	
2.36	42-58	**45.6**	
1.18	34-48	**36.5**	
0.6	26-38	**32.8**	
0.3	18-28	**24.3**	
0.15	12-20	**18.4**	
0.075	4-10	**8.4**	

Note:

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(BBMP Ynk. Zn.)
Yelahanka, Bangalore

(KHUSHBOO L.)
Quality Manager

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TEST REPORT

GRADATION TEST ON BITUMINOUS CONCRETE MIX GRADE - 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.
Name of Agency	M/s. Technical Manager(West), KRIDL.
Date of Testing	25/04/2017
Technical Reference	IS : 2386(Part I)–1963 (Reaffirmed 2011)

	Sample-2		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-18 for BC Grade-2**	**Actual % By Weight Passing IS Sieve**	**Remarks**
19	100	**100**	**Satisfies the requirements**
13.2	79-100	**96.5**	
9.5	70-88	**83.5**	
4.75	53-71	**62.4**	
2.36	42-58	**44.6**	
1.18	34-48	**37.5**	
0.6	26-38	**31.6**	
0.3	18-28	**25.6**	
0.15	12-20	**17.4**	
0.075	4-10	**8.8**	

Note:

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Executive Engineer
Yelahanka Sub. Divison
(BBMP Ynk. Zn.)
Yelahanka, Bangalore

(KHUSHBOO L.)
Quality Manager

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T-2654

To,

Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP.

05th May 2017

Dear Sir,

Sub: Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.
Testing of cubes – Reg.

As requested the 28th day Compressive Strength Test of Cubes was carried out for the above work for the samples supplied by you.

Please find the enclosed Test Reports of the above.

Thanking you,

For Civil Tech Labs,

CIVIL TECH LABS BANGALORE

(KHUSHBOO L.)
Quality Manager

Asst. Executive Engineer
Yelahanka Sub. Divison
(BBMP Ynk. Zn)
Yelahanka, Bangalore

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TEST REPORT
COMPRESSIVE STRENGTH TEST ON CONCRETE CUBES

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.
Name of Agency	M/s. Technical Manager(West), KRIDL.
Grade of Concrete	M-15
No. of cubes tested	3
Technical Reference	IS: 516-1959 (Reaffirmed 2013)

Sl. No.	ID	Dimension of specimen (mm)	Cross sectional area (mm²)	Date of Casting	Date of Testing	Age at test (Days)	Weight (Kg)	Failure Load (KN)	Compressive Strength (N/mm²)	Avg Compressive Strength (N/mm²)
1	Sample-1	150.03 X 150.05 X 150.0	22512	05/04/2017	03/05/2017	28	8.15	350	15.56	15.64
2		150.08 X 150.03 X 150.0	22517				8.16	352	15.64	
3		150.06 X 150.04 X 150.0	22515				8.19	354	15.73	

Note:

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(KHUSHBOO L.)
Quality Manager

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TEST REPORT

COMPRESSIVE STRENGTH TEST ON CONCRETE CUBES

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.
Name of Agency	M/s. Technical Manager(West), KRIDL.
Grade of Concrete	M-15
No. of cubes tested	3
Technical Reference	IS: 516-1959 (Reaffirmed 2013)

Sl. No.	ID	Dimension of specimen (mm)	Cross sectional area (mm^2)	Date of Casting	Date of Testing	Age at test (Days)	Weight (Kg)	Failure Load (KN)	Compressive Strength (N/mm^2)	Avg Compressive Strength (N/mm^2)
1	Sample-2	150.04 X 150.06 X 150.0	22515	05/04/2017	03/05/2017	28	8.17	354	15.73	15.73
2		150.05 X 150.05 X 150.0	22515				8.19	352	15.64	
3		150.06 X 150.03 X 150.0	22514				8.20	356	15.82	

Note:

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Khushboo

(KHUSHBOO L.)
Quality Manager

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TEST REPORT

COMPRESSIVE STRENGTH TEST ON CONCRETE CUBES

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.
Name of Agency	M/s. Technical Manager(West), KRIDL.
Grade of Concrete	M-20
No. of cubes tested	3
Technical Reference	IS: 516-1959 (Reaffirmed 2013)

Sl. No.	ID	Dimension of specimen (mm)	Cross sectional area (mm^2)	Date of Casting	Date of Testing	Age at test (Days)	Weight (Kg)	Failure Load (KN)	Compressive Strength (N/mm^2)	Avg Compressive Strength (N/mm^2)
1	Sample-1	150.04 X 150.05 X 150.0	22514	07/04/2017	05/05/2017	28	8.17	485	21.56	21.85
2		150.05 X 150.03 X 150.0	22512				8.18	490	21.78	
3		150.06 X 150.04 X 150.0	22515				8.19	500	22.22	

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TEST REPORT

COMPRESSIVE STRENGTH TEST ON CONCRETE CUBES

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.
Name of Agency	M/s. Technical Manager(West), KRIDL.
Grade of Concrete	M-20
No. of cubes tested	3
Technical Reference	IS: 516-1959 (Reaffirmed 2013)

Sl. No.	ID	Dimension of specimen (mm)	Cross sectional area (mm^2)	Date of Casting	Date of Testing	Age at test (Days)	Weight (Kg)	Failure Load (KN)	Compressive Strength (N/mm^2)	Avg Compressive Strength (N/mm^2)
1	Sample-2	150.02 X 150.05 X 150.0	22511	07/04/2017	05/05/2017	28	8.19	495	**22.00**	**22.37**
2		150.03 X 150.03 X 150.0	22509				8.20	505	**22.44**	
3		150.04 X 150.04 X 150.0	22512				8.23	510	**22.67**	

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Quality Manager

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T-2654

To,

Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP.

10th April 2017

Dear Sir,

Sub: Testing of Granular Sub Base & Wet Mix Macadam.

As requested, tests on physical properties were carried out for the Granular Sub Base & Wet Mix Macadam supplied by you, for the work of **'Asphalting and Improvements to roads at Surabhi layout 1st main and cross roads in ward no. 01 of Yelahanka Sub Division.'**

Please find the enclosed Test Reports of the above.

Thanking You,
For Civil Tech Labs

Khushboo

(KHUSHBOO L.)
Quality Manager

CIVIL TECH LABS BANGALORE

Asst. Executive Engineer
Yelahanka Sub. Division
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Yelahanka, Bengaluru